
Setting up ISDN BRI traffic reports

The Meridian 1 generates and stores traffic statistics for ISDN BRI. These statistics can be displayed on the administration terminal or printed on the administration printer. To set up and print traffic reports use LD 02.

Refer to *X11 input/output guide* (553-3001-400) LD 02 for complete details concerning Traffic reporting prompts. Refer to *Traffic measurement reports* (553-2001-450) for complete discussions of traffic and the reports generated.

The following ISDN BRI traffic reports can be generated.

- Network traffic report (001) shows ISDN BRI and non ISDN BRI traffic on the network loops;
- MISP and/or BRSC traffic report (011) shows ISDN BRI DSL traffic on the MISP/BRSC loops and BRSC cards;
- MISP and/or BRSC D-channel management messages report (012) shows the management messages handled by each D-channel on the MISP loops and BRSC cards;
- MISP and/or BRSC messages report (013) shows all the messages handled by the MISP loops and BRSC cards;
- Trunk DSL traffic system traffic report (014) shows system traffic on ISDN BRI trunks.
- MPH traffic report (015) shows the ISDN BRI data traffic over MCU, PRI, B-channel, DSL and BRSC links.

Selecting the report types

Generate system traffic reports by using the following command.

SOPS (options)--(OPTIONS)

The input and output parameters for these commands follow.

OPTIONS refers to the reports to be generated. This must be one or more of the following numbers.

001 Network traffic report

011 ISDN BRI MISP and/or BRSC traffic report

012 ISDN BRI MISP D-channel management messages report

013 ISDN BRI MISP messages report

014 ISDN BRI trunk DSL system traffic report

015 ISDN BRI MPH traffic report

The following commands can also be used to find out or clear the current report options that have been selected.

TOPS (options) Displays or prints the current report options selected for the system

COPS (options) -- (OPTIONS) Clears the report options selected for the system

Scheduled reporting

The reports selected using the SOPS command can be printed or displayed at a specified time, according to a schedule. The data is erased after it is displayed or printed.

To set up a schedule for the whole system, use the following command.

```
SSHS (sd) (sm) (ed) (em)--(SD) (SM) (ED) (EM)
(sh) (eh) (so)--(SH) (EH) (SO)
(d)--(D)
```

The input and output parameters for these commands follow.

sd Start day of the reporting period. This must be a 1-digit or 2-digit number from 1 to 31 signifying the 1st to the 31st day of the month.

sm Start month of the reporting period. This must be a 1-digit or 2-digit number from 1 to 12 signifying the 1st to the 12th month of the year.

ed End day of the reporting period. This must be a 1-digit or 2-digit number from 1 to 31 signifying the 1st to the 31st day of the month.

em End month of the reporting period. This must be a 1-digit or 2-digit number from 1 to 12 signifying the 1st to the 12th month of the year.

sh Start hour of the schedule. This must be a 1-digit or 2-digit number from 1 to 24 signifying the 1st to the 24th hour of the day.

eh End hour of the schedule. This must be a 1-digit or 2-digit number from 1 to 24 signifying the 1st to the 24th hour of the day.

so Frequency of the schedule. This must be one of the numbers shown in the following table.

Option numbers for frequency of schedule

Number	Meaning
0	No traffic displayed or printed
1	Hourly on the hour
2	Hourly on the half-hour
3	Half-hourly, on the hour and the half-hour

d Day of the week. This must be one or more of the numbers shown in the following table.

Option numbers for days of the week

Number	Meaning
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

For example, to have the specified reports displayed or printed for the period starting on January 1, 1993 and ending on December 31, 1993 every Monday through Friday every hour on the hour, instead of for the period starting January 1, 1993 and ending on March 31, 1993, Saturday and Sunday, half-hourly, enter the information shown in bold type in the example below. The program displays the current parameter values of the command (shown in unbolded type in the example below).

```
SSHS 1 1 31 3--1 1 31 12
8 8 3--1 24 1
1 7--2 3 4 5 6
```

The following command can also be used to display the current schedule.

```
TSHS (sd) (sm) (ed) (em)
(sh) (eh) (so)
(d)
```

Note: MISP/BRSC reports contain data collected in the previous period. For example, if the system traffic reports are scheduled to be printed every hour and on the hour, the data displayed at 3:00 will correspond to those collected from 1:00 to 2:00. This is also true for immediate reports. That is, if the user issues the command at 2:05, the data displayed will correspond to those collected from 1:00 to 2:00.

Immediate reporting

The reports selected with the SOPS command can be printed or displayed immediately. The data is not erased after the information is displayed or printed.

To print or display traffic reports immediately for the whole system, use the **INVS** command.

For example, to print or display the traffic reports specified by the SOPS command for the whole system, enter the information shown below.

INVS x x

where **x x** is the range of reports.

ISDN BRI traffic reports

Network traffic report (TFS001)

The network traffic report (TFS001) shows the traffic activities for the Meridian 1 lines and trunks including ISDN BRI DSLs. It is used to determine system peak traffic requirements and traffic load distribution. This information is used to optimize the available system resources or to add more resources to handle the existing requirements. It contains the following columns of information.

Network traffic report column descriptions

Column	Description
Loop number	Subscriber loop number
Loop type	Subscriber loop type, which can be a terminal, conference, or TDS
Intraloop FTM	Number of call attempts that failed to match the channel call type on the subscriber loop (in CCS)
Intraloop CCS	Traffic load on the subscriber loop
Intraloop peg count	Number of call attempts over the subscriber loop (in CCS)
Total loop FTM	Total number of call attempts that failed to match for all terminals on the subscriber loop (in CCS)
Total loop CCS	Total traffic load over the subscriber loop
Total loop peg count	Total number of calls handled by all the terminals on the subscriber loop

The following is an example of the Network traffic report.

Format							
System ID	TFS001						
Loop number	Loop type	Intraloop FTM	Intraloop CCS	Intraloop peg count	Total loop FTM	Total loop CCS	Total loop peg count
Example							
200	TFS001						
004	TERM	00000	0000142	00161	00001	0002056	01652 S
008	TERM	00000	0000184	00180	00001	0002500	01725 S
012	TDMS	00000	0000000	00000	00013	0000031	01496
013	CONF	00000	0000000	00000	00000	0000010	00006
014	TERM	00000	0000085	00060	00006	0000544	00287
015	TERM	00003	0000064	00039	00014	0000372	00284
Note 1: Superloops are identified by an "S" at the end of the line. Superloops exist in multiples of four (4, 8, 12, 16, etc.). For example, if superloop 4 exists, loops 5, 6, and 7 do not. Note 2: Determine the grade of service provided within the listed loop, and determine the total loop traffic by dividing the FTM by the peg count.							

MISP/BRSC traffic report (TFS011)

The MISP/BRSC traffic report shows the call processing activities of all DSLs associated with each MISP in the system. It is used to determine the type of ISDN BRI traffic such as voice, data, or packet data.

If a MISP is serving BRSCs, the MISP/BRSC traffic report contains MISP and BRSC information. In TFS011, MISP information in the four Dchannel parameters shows totals collected for the line cards served directly by the MISP. BRSC information shows Dchannel traffic data collected for line cards at the BRSC in the IPE Module. The information collected for each MISP and BRSC in the system is described below.

MISP/BRSC traffic report column descriptions

Column	Description
Attempted calls (MISP only)	Number of attempted calls, including all successfully completed and unsuccessfully completed calls.
Completed call (MISP only)	Number of successfully completed calls for the reported period.
Call length	Average length of a call of a successfully completed call (in seconds).
MISP/BRSC messages	Number of signaling messages sent by the MISP and/or the BRSC to the terminals, on the D-channel.
Terminal messages	Number of signaling messages sent by the terminals to the MISP and/or the BRSC, on the D-channel.
MISP/BRSC data packets	Number of data packets sent by the MISP and/or the BRSC to the terminals.
Terminal data packets	Number of D-channel data packets sent by the terminals to the MISP and/or the BRSC.

The following is an example of a MISP/BRSC traffic report, where MISP004 serves as a BRSC at 24 0 15.

Format						
System ID	TFS011					
MISP and BRSC ID						
Attempted calls	Completed calls	Call length	MISP/BRSC messages	MISP/BRSC terminal messages	MISP/BRSC data packets	MISP/BRSC for terminal data packets
Example						
0111	TFS011					
MISP002						
00020	00006	00019	00080	00040	00000	00006
MISP004						
00030	00001	00030	00125	00600	00180	00012
BRSC 24 0 15			005110	001020	003600	000200

MISP/BRSC D-channel management messages report (TFS012)

The MISP/BRSC D-channel management messages report contains the traffic management activity for each DSL based on the exchange of signaling messages between the MISP and the terminals over the D-channels. It is used to see if there are any communication problems between the MISP/BRSC and the terminals.

If a MISP is serving BRSCs, the MISP D-channel management messages report contains MISP and BRSC information. In TFS012, MISP information shows totals collected for the line cards served directly by the MISP. BRSC information shows Dchannel traffic data collected for line cards at the BRSC. The following example shows the information collected for each MISP and BRSC in the system.

MISP/BRSC D-channel management report column descriptions

Column	Description
MISP/BRSC links	Number (quantity) of MISP/BRSC initiated link initializations
Terminal links	Number (quantity) of terminal initiated link initializations
MISP/BRSC messages	Number(quantity) of management messages sent from the MISP and the BRSC to terminals
Terminal messages	Number(quantity) of management messages sent from terminals to the MISP
Incomplete calls	Number of times the links associated with D-channels were not able to complete calls
Link errors	Number(quantity) of management data link errors

The following is an example of the MISP/BRSC D-channel management messages report where MISP004 serves as a BRSC at 24 0 16.

Format

System ID TFS012

MISP/BRSC ID

MISP/BRSC links	Terminal links	MISP/BRSC messages	Terminal messages	Incomplete calls	Link errors
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Example

0111 TFS012

MISP001

00010	00015	00010	00016	00011	00002
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BRSC 24 0 16

00000	00008	00016	00009	00017	00001
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MISP/BRSC messages report (TFS013)

The MISP/BRSC messages report shows the total number of call processing, maintenance, and management messages sent through each MISP in the system. The totals are grouped according to the size of the message.

If a MISP is serving BRSCs, the MISP MISP/BRSC messages report contains MISP and BRSC information. In TFS013, MISP information shows totals collected for the line cards served directly by the MISP. BRSC information shows D-channel traffic data collected right at the BRSC. The following information is collected for each MISP and BRSC in the system

MISP messages report column descriptions

Column	Description
1-10 bytes	Total number of messages that are from 1 to 10 bytes long
11-20 bytes	Total number of messages that are from 11 to 20 bytes long
Greater than 20	Total number of messages that are over 20 bytes long

The following is an example of the MISP/BRSC messages report, where MISP004 serves as a BRSC at 24 0 17.

Format		
System ID TFS013		
MISP/BRSC ID		
1-10 bytes	11-20 bytes	Greater than 20
Example		
0111 TFS013		
MISP001		
00060	00000	00000
BRSC 24 0 17		
00012	00004	00000

ISDN BRI trunk DSL system traffic report (TFS014)

The ISDN BRI trunk DSL system traffic report (TFS014), dedicated to ISDN BRI trunk DSLs, provides traffic measurement similar to the one provided by the ISDN PRI system traffic report; please refer to *Traffic measurement reports* (553-2001-450).

The report contains the following information for each MISP in the system.

System ID TFS014

MISP ID

Total number of outgoing
maintenance messages

Total number of incoming
maintenance messages

Total number of outgoing
administration messages

Total number of incoming
administration messages

Total number of outgoing protocol
messages

Total number of Layer 3 protocol
errors

Total number of Layer 2 protocol
errors

Total number of Layer 1 errors

Total number of connected calls

Meridian 1 Packet Handler traffic report (TFS015)

The Meridian 1 Packet Handler traffic report provides specific information about incoming and outgoing calls and data packets. This report is particularly useful for analyzing the flow of data over network links.

The MPH traffic report contains the following columns:

MPH traffic report column descriptions

Column	Description
aa	MPH loop number.
bb	MPH link interface type, up to four characters (MCU, PRI, BCH, BRIL, or BRSC). Note: To determine which link interface type is listed in bb, perform a STIF command in LD 32; this command displays the interface type and the associated timeslot.
cc	The timeslot number of the MPH link interface type, up to five digits.
dd	The number of times the link was initialized, up to five digits.
ee	The number of incoming calls that were attempted, up to five digits.
ff	The number of incoming calls that were completed, up to five digits.
gg	The number of outgoing calls that were attempted, up to five digits.
hh	The number of outgoing calls that were completed, up to five digits.
ii	The average length, in seconds, of data calls, up to five digits.
jj	The number of incoming data packets, up to 10 digits.
kk	The number of outgoing data packets, up to 10 digits.

The following is an example of a Meridian 1 Packet Handler traffic report.

Note: The example shown is for an MCU interface type; the format would be exactly the same for the other interface types (PRI, BRIL, BCH, or BRSC), with “bb” indicating the interface type.

Format							
System ID TFS015							
MPH aa							
bb	cc	dd	ee	ff	gg	hh	ii
jj	kk						
Example							
0111 TFS015							
MPH002							
MCU	0006	0019	00040	00040	00006	00001	00360
0000000780	0000000568						

Call Detail Recording for the Meridian 1 Packet Handler

CDR for the MPH has internal and external record types. When either or both originating and TSPs have CDR, the system generates an internal record type G. Internal CDR may be configured on the TSP whether or not the customer has CDR enabled CDR data does not print if the customer with the TSP does not have CDR.

A call that connects to the public data network, including calls between two different MPH applications on the same switch, generates an external record type H. External CDR configuration is based on customer block data. Incoming and/or outgoing packet data calls may generate external CDR records. The PVC and B-channel calls have no CDR because there is no call establishing process involved.

The MPH traffic report has ten columns as described below:

CDR for MPH report column descriptions

Column	Description
aa	MPH record type, G for internal or H for external; one character.
bb	The record number field, identifying the current record in the CDR sequence. It is the CDR record number for the customer, and it increments for all CDR record types; three characters, right justified.
cc	The customer number field, identifying the customer associated with the call; two characters.
dd	The originating ID is the originating DNA number for internal or external outgoing calls. For external incoming calls, this value is the TN of the incoming link (MCU = ll ss cc uu, PRI = ll cc; filled to 14 characters, left justified.
ee	The terminating ID is the originating DNA number for internal or external outgoing calls. For external outgoing calls, this value is the TN of the outgoing link (MCU = ll ss cc uu, PRI = ll cc; filled to 14 characters, left justified.
ff	Date in Month/Day format; five characters.
gg	Time in Hour:Minute format; five characters.
hh	Call duration, shown in format Hour:Minute:Second; eight characters.
ii	The number of incoming data packets, up to 10 digits.
jj	The number of outgoing data packets, up to 10 digits.

The following is an example of a CDR for MPH report.

Format							
aa	bb	cc	dd	ee	ff	gg	hh
ii			jj				
Example							
G	123	11	ll cc	ll cc	02/26	08:59	00:20:06
	0000000780		0000000568				